

Abstract

One aspect of the present invention provides a process for forming IC devices with ESD protection transistors. According to one aspect of the invention, an ESD protection transistor is provided with a light doping and then, after forming spacers, a heavy doping. The heavy doping with spacers in place can lower the sheet resistance, enhance the bipolar effect for the transistor, reduce the transistor's capacitance, and reduce the junction breakdown voltage, all without causing short channel effects. The invention thereby provides ESD protection transistors that are compact, highly sensitive, and fast-switching. The spacers can be formed at the same time as spacers for other transistors, such as other transistors in a peripheral region of the device.